$$1/3\ POC[I]\underline{l}_3 + ¼\ SiF_4 + ½\ O_2 == 1/3\ POF_3 + ¼\ SiO_2 + ½\ C[I]\ \underline{l}_2,$$

has a ΔG of -8.5 Kcal per mole. The reaction to form POF_3 goes forward even while stripping fluorine from SiF_4. ΔG_f for species such as $SiO_{3/2}F$ are not readily available, but since the silicon oxyfluorides spontaneously decompose to SiF_4 and silica at temperatures above 1300°K, it is safe to say that $\Delta G[_1]\ \underline{f}(SiO_xF_y) > \Delta G_f\ (SiF_4)$ so that the reaction above describes an upper limit for the reaction energy for stripping fluorine from fluorinated silica. In the present example, the stripping agent preferably includes $POCl[_2]\ \underline{3}$. The approximate refractive index profile an optical waveguide fiber 46 (Fig. 6) resulting from preform 10 after being completely sintered is shown in Fig. 7. Fiber 46 includes a core region 48, a moat or first radial portion 22 surrounding core region 20, and an overclad or second radial portion 24 surrounding first radial portion 22, which correspond to first region 20, second region 22 and third region 24 of soot preform 10.

In the claims:

16. The method of claim 15 wherein the drying step includes selecting the drying agent from a group including chlorine, germanium chloride, germanium tetrachloride, [silicate] <u>silicon</u> tetrachloride, and combinations thereof.